

## INTERNATIONAL SEARCH REPORT

International application No.

PCT/JP2004/019686

A. CLASSIFICATION OF SUBJECT MATTER  
Int.Cl<sup>7</sup> H01M2/26

According to International Patent Classification (IPC) or to both national classification and IPC

## B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)  
Int.Cl<sup>7</sup> H01M2/26Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched  
Jitsuyo Shinan Koho 1922-1996 Jitsuyo Shinan Toroku Koho 1996-2005  
Kokai Jitsuyo Shinan Koho 1971-2005 Toroku Jitsuyo Shinan Koho 1994-2005

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

## C. DOCUMENTS CONSIDERED TO BE RELEVANT

| Category*   | Citation of document, with indication, where appropriate, of the relevant passages   | Relevant to claim No.     |
|-------------|--|---------------------------|
| X<br>Y      | JP 9-35701 A (Denso Corp.),<br>07 February, 1997 (07.02.97),<br>Claims 1 to 7; examples; drawings<br>(Family: none)                            | 1, 3, 4, 6-8<br>2, 5, 9   |
| X<br>Y<br>A | JP 2002-170546 A (Sanyo Electric Co., Ltd.),<br>14 June, 2002 (14.06.02),<br>Claims 1 to 3; Par. Nos. [0024], [0025], [0034]<br>(Family: none) | 1, 3, 6-8<br>2, 5, 9<br>4 |
| Y           | JP 2002-134157 A (Toyota Motor Corp.),<br>10 May, 2002 (10.05.02),<br>Claims 1, 2; examples; drawings<br>(Family: none)                        | 2, 5                      |

☒ Further documents are listed in the continuation of Box C.☐ See patent family annex.

## \* Special categories of cited documents:

- "A" document defining the general state of the art which is not considered to be of particular relevance
- "E" earlier application or patent but published on or after the international filing date
- "L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)
- "O" document referring to an oral disclosure, use, exhibition or other means
- "P" document published prior to the international filing date but later than the priority date claimed

- "T" later document published after the international filing date or priority date and not in conflict with the applications but cited to understand the principle or theory underlying the invention
- "X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone
- "Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art
- "&" document member of the same patent family

Date of the actual completion of the international search  
04 April, 2005 (04.04.05)Date of mailing of the international search report  
19 April, 2005 (19.04.05)Name and mailing address of the ISA/  
Japanese Patent Office

Authorized officer

Facsimile No.

Telephone No.

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## C (Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT

| Category* | Citation of document, with indication, where appropriate, of the relevant passages  | Relevant to claim No. |
|-----------|---|-----------------------|
| X<br>Y    | JP 2002-231214 A (Japan Storage Battery Co., Ltd.),<br>16 August, 2002 (16.08.02),<br>Claims 1 to 9; examples; drawings<br>(Family: none) | 1, 3, 6, 7<br>2, 5    |
| X<br>Y    | JP 2002-305029 A (Mitsubishi Materials Corp.),<br>18 October, 2002 (18.10.02),<br>Claims 1 to 6; examples; drawings<br>(Family: none)     | 1, 3, 6, 7<br>5       |
| X<br>Y    | JP 2002-252036 A (Mitsubishi Materials Corp.),<br>06 September, 2002 (06.09.02),<br>Claims 1 to 5; examples; drawings<br>(Family: none)   | 1, 3, 6, 7<br>5       |
| X<br>Y    | JP 2001-257002 A (Sanyo Electric Co., Ltd.),<br>21 September, 2001 (21.09.01),<br>Claims 1 to 4; examples; drawings<br>(Family: none)     | 1, 3, 6, 7<br>2, 5    |
| P, X      | JP 2004-71199 A (Japan Storage Battery Co., Ltd.),<br>04 March, 2004 (04.03.04),<br>Claims 1, 2; examples; drawings<br>(Family: none)     | 1, 3, 6, 7            |
| A         | JP 2001-6653 A (NEC Corp.),<br>12 January, 2001 (12.01.01),<br>Claims 1 to 4; examples; drawings<br>(Family: none)                        | 1-9                   |

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**Box No. II Observations where certain claims were found unsearchable (Continuation of item 2 of first sheet)**

This international search report has not been established in respect of certain claims under Article 17(2)(a) for the following reasons:

1. ☐ Claims Nos.:  
because they relate to subject matter not required to be searched by this Authority, namely:
  
2. ☐ Claims Nos.:  
because they relate to parts of the international application that do not comply with the prescribed requirements to such an extent that no meaningful international search can be carried out, specifically:
  
3. ☐ Claims Nos.:  
because they are dependent claims and are not drafted in accordance with the second and third sentences of Rule 6.4(a).

**Box No. III Observations where unity of invention is lacking (Continuation of item 3 of first sheet)**

This International Searching Authority found multiple inventions in this international application, as follows:

See extra sheet.

1. ☐ As all required additional search fees were timely paid by the applicant, this international search report covers all searchable claims.
2. ☒ As all searchable claims could be searched without effort justifying an additional fee, this Authority did not invite payment of any additional fee.
3. ☐ As only some of the required additional search fees were timely paid by the applicant, this international search report covers only those claims for which fees were paid, specifically claims Nos.:
  
4. ☐ No required additional search fees were timely paid by the applicant. Consequently, this international search report is restricted to the invention first mentioned in the claims; it is covered by claims Nos.:

**Remark on Protest**

- ☐ The additional search fees were accompanied by the applicant's protest.
- ☐ No protest accompanied the payment of additional search fees.

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Continuation of Box No.III of continuation of first sheet(2)

For the inventions of claims to satisfy the requirement of unity of invention, the inventions require a special technical feature linking the inventions so as to form a single general inventive concept. The inventions of claims 1-9 are linked to each other only by the technical matter described in claim 1. However, the technical matter described in claim 1 is widely known as described in each of the below listed documents, and therefore the technical matter is not a special technical feature.

From the above, the inventions of claims 1-9 have no special technical feature for linking the inventions to form a single general inventive concept. Accordingly, it is apparent that the inventions of claims 1-9 do not satisfy the requirement of unity of invention.

Next, the number of inventions is examined. Claims 2, 3, 4, 5, 6, 7, and 8 directly dependent on claim 1 have no common special technical feature.

Claims 1-9 include at least seven inventions even with other claims described in a form of dependent claim excluded.

**Documents:**

1. JP 9-35701 A (Denso Corp.), 07 February, 1997 (07.02.97), Claims 1 to 7; examples; drawings (Family: none)
2. JP 2002-170546 A (Sanyo Electric Co., Ltd.), 14 June, 2002 (14.06.02), Claims 1 to 3; Par. Nos. [0024], [0025], [0034] (Family: none)
3. JP 2002-231214 A (Japan Storage Battery Co., Ltd.), 16 August, 2002 (16.08.02), Claims 1 to 9; examples; drawings (Family: none)
4. JP 2002-305029 A (Mitsubishi Materials Corp.), 18 October, 2002 (18.10.02), Claims 1 to 6; examples; drawings (Family: none)
5. JP 2002-252036 A (Mitsubishi Materials Corp.), 06 September, 2002 (06.09.02), Claims 1 to 5; examples; drawings (Family: none)
6. JP 2001-257002 A (Sanyo Electric Co., Ltd.), 21 September, 2001 (21.09.01), Claims 1 to 4; examples; drawings (Family: none)